

# alberta pork production handbook

**Alberta**  
AGRICULTURE  
Pork Industry Branch



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## Porcine Parvovirus Infection

### Including:

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Porcine Parvovirus Infection (PPV) is by far the most frequently seen infectious cause of reproductive failure in Alberta swine. The virus is ubiquitous among swine throughout the world. Disease occurs when non-immune females are exposed to the virus. All ages of swine can be infected; however, the results of infection, namely infertility, embryonic death, mummification, and stillbirths are only seen in the breeding female.

### A. Epidemiology

Because of PPV's extremely widespread occurrence, sows in most herds are immune. Occasional cases of PPV infection may, however, occur in gilts because they were not fully immune at the time of first gestation. Newborn pigs acquire a passive immunity from colostrum. In some pigs this immunity can persist for several months. Passive immunity interferes with the development of an active immunity, produced either by vaccination or exposure to the virus. Exposure of gilts to the virus during their first pregnancy, after the passive immunity has waned and before an active immunity is obtained, can result in disease.

Although carrier animals, e.g. boars, can spread infection, they are not the usual route of disease transmission. Normally animals only shed the virus during the acute stages of the disease, which lasts about 14 days.

The virus, however, is relatively resistant to adverse conditions and many of the common disinfectants, and it can survive for months. Therefore, the environment is a much more likely source of infection rather than other animals.

### B. Signs

The clinical signs of disease depend almost entirely upon the stage of gestation at which the infection occurs. Infection before breeding or very early in gestation will result in infertility. Gilts will cycle regularly, but because the embryos are reabsorbed they return to estrus. Infection a little later in pregnancy can result in pseudopregnancy. The fetuses are still reabsorbed, but the hormone system operates as if the dam were pregnant, and there is no return to estrus. After about day 40 of pregnancy, fetal bone begins to develop and reabsorption of fetuses cannot occur. Fetuses dying at this stage are not aborted, instead they become mummified. Infection in the last half of a pregnancy will likely result in a higher than normal number of stillborn pigs.

### C. Diagnosis

PPV infection should be suspected when reproductive failure occurs and particularly if failure to conceive or high numbers of mummified pigs are occurring. Laboratory testing is required to confirm the diagnosis. Several mummified pigs (if available) should be submitted in preference to stillborn or weak full term pigs. Uteri collected at the packing plant from anestrous sows may also be of value as even when the fetuses die in early gestation, sufficient material may remain to allow a specific fluorescent antibody test to be carried out. Virus isolation can be attempted but is very time consuming and often unsuccessful. A serological test is also available but is of little value as a diagnostic aid in view of the widespread nature of the virus and the fact that most breeding females have already been exposed.

#### **D. Treatment and control**

There is no treatment for PPV infection. Producers who purchase gilts or rear their gilt replacements in isolation from the main breeding herd may find the use of a vaccine beneficial. Alternatively, gilts should be exposed to older sows in the herd in the hope that either the sows are shedding virus or that the area is contaminated with the virus. In either case, gilts that have not lost their maternal immunity before breeding will not benefit from exposure to the virus and may not be protected from infection.

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